WHAT IS CLAIMED IS:

1. A method of notifying a receiver of a bit allocation change in a multicarrier modulation communications system in which data frames and synchronization frames are transmitted in superframes from a transmitter to the receiver, comprising the steps of:

at the transmitter, changing an inversion state of successive synchronization frames to notify the receiver of a bit allocation change; and

at the receiver, detecting a change in inversion state of received synchronization frames to determine the bit allocation change.

2. A transmitter for a multicarrier modulation communications system for use in carrying out the method of claim 1, the transmitter comprising:

information for allocating data bits to multicarrier subchannels for transmission in respective data frames;

a control unit for controlling transmission of the data frames in superframes each including a synchronization frame; and

means for changing an inversion state of the synchronization frames to indicate a change of said information, successive changes of said information being indicated by opposite changes of the inversion state of the synchronization frames, respectively from non-inverted to inverted synchronization frames and from inverted to non-inverted synchronization frames.

3. A receiver for a multicarrier modulation communications system for use in carrying out the method of claim 1, the receiver comprising:

information for decoding received multicarrier subchannel data frames to data bits in accordance with bit allocations, the data frames being received in superframes each including a synchronization frame; and

a control unit for detecting a change of an inversion state of successive synchronization frames and changing said bit allocations in response to such detection, successive changes of said bit allocations being effected in response to detection of opposite changes of the inversion state of the synchronization frames, respectively from non-inverted to inverted synchronization frames and from inverted to non-inverted synchronization frames.

4. A method of notifying a receiver of bit allocation changes in a DMT (discrete multitone) communications system in which information is transmitted from a transmitter to the receiver in superframes each of which comprises a plurality of DMT data symbols and a synchronization symbol, comprising the steps of:

at the transmitter, changing an inversion state of the synchronization symbols, from non-inverted to inverted and from inverted to non-inverted, to notify the receiver of successive bit allocation changes; and

at the receiver, detecting changes in the inversion state of received synchronization symbols, from non-inverted to inverted and from inverted to non-inverted, to determine the successive bit allocation changes.

5. A transmitter for a DMT (discrete multitone) communications system for use in carrying out the method of claim 4, the transmitter comprising:

a bit allocation table in accordance with which data bits are allocated to tones for transmission in respective DMT symbols;

a control unit for controlling transmission of the DMT symbols in superframes each including a synchronization symbol; and

means for changing an inversion state of the synchronization symbols to indicate a change of the bit allocation table, successive changes of the bit allocation table being indicated by opposite changes of the inversion state of the synchronization symbols, respectively from non-inverted to inverted synchronization symbols and from inverted to non-inverted synchronization symbols.

6. A transmitter as claimed in claim 5 wherein the transmitter includes an IDFT (Inverse Discrete Fourier Transform) and the means for changing an inversion state of the synchronization symbols to indicate a change of the bit allocation table comprises means for changing a sign of inputs to or outputs from the IDFT.

7. A transmitter as claimed in claim 5 wherein the transmitter includes a pseudo random data source in accordance with which tones of the synchronization symbols are modulated, and the means for changing an inversion state of the synchronization symbols to indicate a change of the bit allocation table comprises means for selectively inverting an output of the pseudo random data source.

8. A receiver for a DMT (discrete multitone) communications system for use in carrying out the method of claim 4, the receiver comprising:

a bit allocation table in accordance with which DMT symbols are decoded to data bits, the DMT symbols being received in superframes each including a synchronization symbol; and

a control unit for detecting a change of an

inversion state of successive synchronization symbols and changing the bit allocation table in response to such detection, successive changes of the bit allocation table being effected in response to detection of opposite changes of the inversion state of the synchronization symbols, respectively from non-inverted to inverted synchronization symbols and from inverted to non-inverted synchronization symbols.

9. A method of effecting bit allocation changes in a DMT (discrete multitone) communications system in which information is transmitted from a transmitter to a receiver in superframes each of which comprises a plurality of DMT data symbols and a synchronization symbol, comprising the steps of:

at the transmitter, in response to a request from the receiver for a change of bit allocations, sending to the receiver an acknowledgement identifying a superframe and, commencing with the identified superframe, changing an inversion state of the synchronization symbols, from non-inverted to inverted or from inverted to non-inverted, and implementing said bit allocation changes; and

at the receiver, sending said request for a change in bit allocations, detecting the acknowledgement and identified superframe, and detecting the change in the inversion state of received synchronization symbols and implementing said bit allocation changes commencing with the identified superframe.

10. A method as claimed in claim 9 and comprising the steps of counting the superframes in synchronism at the transmitter and at the receiver, wherein the acknowledgement identifying a superframe comprises a superframe number.

11. A transmitter for a DMT (discrete multitone) communications system for use in carrying out the method of claim 10, the transmitter comprising:

a bit allocation table in accordance with which data bits are allocated to tones for transmission in respective DMT symbols;

a control unit for controlling transmission of the DMT symbols in superframes each including a synchronization symbol, the control unit including means for sending said acknowledgement identifying a superframe in response to a request from the receiver for a change of bit allocations; and

means for changing said bit allocation table and an inversion state of the synchronization symbols commencing with the identified superframe.

12. A transmitter as claimed in claim 11 wherein the transmitter includes an IDFT (Inverse Discrete Fourier Transform) and the means for changing an inversion state of the synchronization symbols comprises means for changing a sign of inputs to or outputs from the IDFT.

13. A transmitter as claimed in claim 11 wherein the transmitter includes a pseudo random data source in accordance with which tones of the synchronization symbols are modulated, and the means for changing an inversion state of the synchronization symbols comprises means for selectively inverting an output of the pseudo random data source.

14. A receiver for a DMT (discrete multitone) communications system for use in carrying out the method of claim 10, the receiver comprising:

a bit allocation table in accordance with which DMT

symbols are decoded to data bits, the DMT symbols being received in superframes each including a synchronization symbol; and

a control unit for sending said request for a change in bit allocations, detecting the acknowledgement and identified superframe, and detecting the change in the inversion state of received synchronization symbols and changing said bit allocation table commencing with the identified superframe.